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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,505	11/24/2003	Keith H. Kuechler	2003B127	4591
23455	7590	03/22/2006	EXAMINER	
EXXONMOBIL CHEMICAL COMPANY			BULLOCK, IN SUK C	
5200 BAYWAY DRIVE			ART UNIT	
P.O. BOX 2149			PAPER NUMBER	
BAYTOWN, TX 77522-2149			1764	

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/720,505

Applicant(s)

KUECHLER ET AL.

Examiner

In Suk Bullock

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-106 is/are pending in the application.
- 4a) Of the above claim(s) 63-106 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/24/03 & 8/25/04.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-62, drawn to a process for converting oxygenate to olefins, classified in class 585, subclass 638.
- II. Claims 63-106, drawn to an apparatus for converting oxygenates to olefins, classified in class 422, subclass 129.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process such as alkylation, oligomerization, etc.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Ms. Diane Kilpatrick-Lee on November 16, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-62. Affirmation of this election must be made by applicant in replying to this Office action. Claims 63-106 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 6,482,998 to Kuechler et al. (hereinafter "Kuechler") in view of U.S. Patent 5,744,680 to Mulvaney, III et al. (hereinafter "Mulvaney").

The Kuechler reference discloses a process for catalytically converting oxygenate to olefins comprising: (a) contacting the oxygenate feed with a catalyst comprising a molecular sieve under effective conditions to produce a vaporous product comprising olefins, water and unreacted oxygenated feed; (b) quenching said vaporous product to produce an overhead light product fraction comprising light olefins, dimethyl ether, methane, CO, CO₂, ethane, propane, and other minor components such as water and unreacted oxygenated feed and a bottoms heavy product fraction comprising by-product water, a portion of the unreacted oxygenate feed, a small portion of the oxygenated conversion by-products, and usually bulk of the quench medium; and (c) sending at least a portion of the heavy fraction which is combined with other water-containing streams (e.g., methanol/water stream) to a fractionator to separate water from other compounds such as unreacted oxygenate feed. See col. 11, line 23 to col. 12, line 56; Example 1; and the figure. The "other water-containing stream" in step c above may be obtained from one of the fractions within the oxygenate conversion or from the associated product recovery (col. 10, lines 2-7).

Kuechler fails to disclose the amount of oxygenate contained in the water-containing stream added to the fractionator. Kuechler, also, fails to disclose various separation steps to recover olefins.

In step c process above, Kuechler explicitly discloses that if other streams having compositions similar to or compatible with the heavy fraction exist within the oxygenate conversion and the associated product recovery process, such other streams are combined with the heavy fraction first and the combined stream is sent to the fractionator (see col. 10, lines 2-7). Since the oxygenate conversion reaction of Kuechler is same as the claimed process, same effluent would be produced and the quenching/condensing step would produce similar fractions. Thus, it is expected that the amount of oxygenate contained in the water-containing stream added to the fractionator in Kuechler process would at least overlap with the claimed level of at least 20 wt%.

The Mulvaney reference discloses a process for converting oxygenate feedstream to light olefins in the presence of a molecular sieve catalyst. The effluent from the oxygenate conversion reactor is passed through various separations steps to recover olefins, said separation steps including water removal, an acid gas removal, methanol removal, and further separation to recover pure ethylene and pure propylene. See col. 8, line 25 to col. 9, line 30 and the figure.

The claimed step of using recovery train to recover at least some of olefins is conventional as shown by Mulvaney reference. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the

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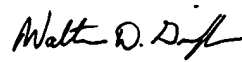
process of Kuechler by combining a water-containing stream from any stage of the recovery train disclosed by Mulvaney (e.g., water removal zone, methanol removal zone, etc.) with the heavy fraction since Kuechler discloses broadly that other streams having compositions similar to or compatible with the heavy fraction within the oxygenate conversion and the associated product recovery process may be used.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to In Suk Bullock whose telephone number is 571-272-5954. The examiner can normally be reached on Monday - Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

I.B.


Walter D. Griffin
Primary Examiner